

ABSTRACT OF THE DISCLOSURE

This disclosure document outlines the concept and description of a Rake receiver with single bit detection processing optimized for the reception of UWB (Ultra_WideBand) signals. The propagation channel estimation required by the Rake receiver is achieved by estimating the probability density function of the single bit quantizer output rather than using a complex analog amplitude estimation which typically requires multi-bit detector quantization and significantly more processing. As only a single quantization bit is used, the quantity of Digital Signal Processing (DSP) operations required per received data bit is drastically reduced. This has advantages in reducing the processing power and cost requirements.